



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



SEP 20 2011

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St  
San Francisco, CA 94105

**Re: Final - Authority to Construct / Certificate of Conformity (Minor Mod)  
Project # 1112108**

Dear Mr. Rios:

The Air Pollution Control Officer has issued an Authority to Construct (C-1121-33-9 and '134-9) with a Certificate of Conformity to Aera Energy LLC. The project authorized replacement of the heat recovery steam generators (HRSGs) and installation of Selective Catalytic Reduction (SCR) on two 52.7 MMBtu/hr natural gas-fired gas turbines driving 4 MW electrical generators.

Enclosed are copies of the Authority to Construct. The application and proposal were sent to US EPA Region IX on August 23, 2011. No comments were received following the District's preliminary decision on this project.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Sincerely,



David Warner  
Director of Permit Services

Enclosures  
rue

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

SEP 20 2011



Mr. Tim Parcel  
Aera Energy LLC  
PO Box 11164  
Bakersfield, CA 93389

**Re: Final - Authority to Construct / Certificate of Conformity (Minor Mod)  
Project # 1112108**

Dear Mr. Parcel:

The Air Pollution Control Officer has issued an Authority to Construct (C-1121-33-9 and -34-9) with a Certificate of Conformity to Aera Energy LLC. The project authorized replacement of the heat recovery steam generators (HRSGs) and installation of Selective Catalytic Reduction (SCR) on two 52.7 MMBtu/hr natural gas-fired gas turbines driving 4 MW electrical generators.

Enclosed is the Authority to Construct and invoice. The application and proposal were sent to US EPA Region IX on August 23, 2011. No comments were received following the District's preliminary decision on this project.

Prior to operating with modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Sincerely,

  
David Warner  
Director of Permit Services

Enclosures  
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34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



## AUTHORITY TO CONSTRUCT

PERMIT NO: C-1121-33-9

ISSUANCE DATE: 09/19/2011

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC  
MAILING ADDRESS: 10000 MING AVE  
P O BOX 11164  
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL PRODUCTION  
FRESNO COUNTY, CA

SECTION: 32 TOWNSHIP: 19S RANGE: 15E

### EQUIPMENT DESCRIPTION:

MODIFICATION OF TG-1, 52.7 MMBTU/HR ALLISON GM 501-KB5 NATURAL GAS FIRED TURBINE WITH WATER INJECTION DRIVING A 4 MW ELECTRICAL GENERATOR: REPLACE HEAT RECOVERY STEAM GENERATOR WITH NEW UNIT INCLUDING SELECTIVE CATALYTIC REDUCTION (SCR) WITH AMMONIA TANK AND DELIVERY SYSTEM TO ACHIEVE TO 5 PPMV NOX FOR RULE 4703 COMPLIANCE

## CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Unit shall be exclusively fired with natural gas containing no more than 1 grain of total sulfur per 100 standard cubic feet of gas. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Except during periods of startup, shutdown, and shakedown, emissions rates (three hour rolling average) shall not exceed any of the following: NOx (as NO2): 5 ppmv dry @ 15% O2, CO: 38 ppmv dry @ 15% O2. [District Rule 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

C-1121-33-9: Sep 19 2011 4:26PM - EDGEHILL : Joint Inspection NOT Required

5. Emissions shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 46.3 lb/day, CO: 107.5 lb/day, PM<sub>10</sub>: 8.3 lb/day; SO<sub>x</sub> (as SO<sub>2</sub>): 3.6 lb/day or VOC: 2.7 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall be required to conform to the compliance testing and sampling procedures described in District Rule 1081 (as amended 12/16/93). [District Rules 1081 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
8. If this unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(h)(3) and District Rule 1070] Federally Enforceable Through Title V Permit
9. If this unit is not fired on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(j)(2)(i)] Federally Enforceable Through Title V Permit
10. If this unit is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM D3246 or double GC for H<sub>2</sub>S and mercaptans, and fuel H<sub>2</sub>S content - gas detection tubes calibrated for H<sub>2</sub>S or other District-approved fuel sulfur detection method(s) or device(s). [40 CFR 60.335(b)(10)(2) and District Rule 1070] Federally Enforceable Through Title V Permit
11. If this unit is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520] Federally Enforceable Through Title V Permit
12. Except during startup, shutdown, and reduced load periods, any one-hour period during which the average ammonia injection flowrate, as measured by the continuous monitoring system, falls outside the flowrate range as determined to demonstrate compliance shall be reported to the APCO. Each report shall include the average average water-to-fuel ratio, ammonia injection flowrate, average fuel consumption, ambient conditions, turbine gas load and nitrogen content of the fuel during the period of excess emissions. [40 CFR 60.334(j)(1)(i)] Federally Enforceable Through Title V Permit
13. Permittee shall install, operate and maintain in calibration, to within 5% accuracy, a monitoring system which continuously measures and records the water-to-fuel ratio and fuel consumption and which correlates the water-to-fuel ratio during initial source testing with the NO<sub>x</sub> concentration in the exhaust. [District NSR Rule, Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
14. Permittee shall install and operate a system which continuously measures and records elapsed time of turbine operation. [District Rule 40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
15. Permittee shall install, operate and maintain in calibration a system which continuously measures and records ammonia injection flow rate, monitors ammonia pressure, and sounds an alarm if outside the acceptable operating pressure range. Ammonia injection flow rate and pressure shall be operated within the range recommended by SCR manufacturer and determined by performance tests such that the turbine maintains 95% or greater control efficiency or complies with the applicable NO<sub>x</sub> emission concentration limit. [District Rule 40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
16. Gas turbine engine shall be equipped with water injection system for NO<sub>x</sub> control. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Gas turbine engine water injection rate shall be maintained at a water-to-fuel ratio documented to result in compliance with emission limits. Operator shall perform and submit an engineering performance test to demonstrate continuous compliance with emissions limits beyond the specified ratios. [District Rules 2201 and 4703] Federally Enforceable Through Title V Permit
18. Gas turbine engine shall be equipped with continuously recording water to fuel injection rate monitoring system accurate to within +/- 5%. [District Rule 2201& 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. If ammonia injection system is inoperative for more than 1 hour, gas turbine shall be shut down. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Evaporative cooler shall use only fresh and filtered water. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Waste heat recovery steam generator exhaust shall be equipped with permanent provisions to allow collection of gas samples consistent with EPA methods. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The ammonia (NH<sub>3</sub>) emissions from the exhaust of the SCR system serving this gas turbine shall not exceed 20 ppmvd @ 15% O<sub>2</sub>. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Permittee shall maintain accurate records of ammonia consumption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit
24. Gas temperature at SCR catalyst section inlet shall be continuously monitored by operational temperature indicator. Inlet gas temperature to catalyst bed shall be maintained within range recommended by catalyst manufacturer and determined by performance tests. [40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
25. During an initial shakedown period, except during periods of startup and shutdown, the emissions shall not exceed any of the following limits: 35 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub> referenced as NO<sub>2</sub>. The shakedown period shall not exceed 90 calendar days from the initial startup of the unit under this permit. The shakedown period must be concluded prior to the applicable Rule 4703 compliance deadline selected for this unit. The permittee shall maintain a record of the date of initial operation of this unit, fuel combusted (scf/day) on daily basis, water-to-fuel ratio, and results of ammonia injection rate monitoring from CMS. These records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Startup and shutdown of the gas turbine, as defined in this permit and in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours for startup and two hours for shutdown, per occurrence. Emission concentrations subsequent to this startup period shall not exceed the limits specified in this permit except during shutdown. [40 CFR Subpart A 60.2 and District Rule 4703] Federally Enforceable Through Title V Permit
27. The duration of reduced load shall not exceed a time period of one hour per occurrence. [District Rule 4703] Federally Enforceable Through Title V Permit
28. Daily records of NO<sub>x</sub> and CO emission calculations during days of startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
29. Maximum NO<sub>x</sub> (as NO<sub>2</sub>) and SO<sub>x</sub> (as SO<sub>2</sub>) emission rates (1 hr average) shall not exceed NSPS standard of 150 ppmv-dry @ 15% O<sub>2</sub>, and 150 ppmv-dry @ 15% O<sub>2</sub>, respectively. [40 CFR 60.332(a)(2) & 60.333(a)] Federally Enforceable Through Title V Permit
30. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> at least once every month in which a source test is not performed. NO<sub>x</sub>, CO and O<sub>2</sub> monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH<sub>3</sub> monitoring shall be conducted utilizing gas detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the previous calendar month. [District Rule 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

31. If the NOx or CO concentrations corrected to 15% O<sub>2</sub> as measured by the portable analyzer or the NH<sub>3</sub> concentration, as measured by gas detection tubes or a District approved equivalent method, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continues to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4703] Federally Enforceable Through Title V Permit
32. All NOx, CO, O<sub>2</sub> and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O<sub>2</sub> analyzer as well as the NH<sub>3</sub> emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4703] Federally Enforceable Through Title V Permit
33. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH<sub>3</sub> and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NOx, CO and NH<sub>3</sub> concentrations corrected to 15% O<sub>2</sub>, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rule 4703] Federally Enforceable Through Title V Permit
34. A source test to demonstrate compliance with NOx, CO, and NH<sub>3</sub> emission limits, and fuel sulfur content shall be performed within 60 days after the shakedown period has been completed for this modified unit. The appropriate ammonia injection rate, fuel consumption, ammonia to fuel ratio, water to fuel ratio, and any other associated operating parameter shall be continuously monitored and recorded during this test to establish acceptable operating ranges. Selective Catalytic Reduction (SCR) 95% control efficiency may be demonstrated as an alternative to compliance with the Rule 4703 NOx emissions concentration limit. [District Rules 2201, 40 CFR 60.334(g), 40 CFR 60.335(b), and 4703] Federally Enforceable Through Title V Permit
35. Source testing to measure exhaust gas NOx, CO, and NH<sub>3</sub> concentrations and, if applicable, Selective Catalytic Reduction (SCR) control efficiency shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). Performance testing shall be conducted under conditions representative of normal operation. [40 CFR 60.335(b), District Rule 4703, District Rule 2520] Federally Enforceable Through Title V Permit
36. The owner or operator shall provide source test information annually regarding the exhaust gas NOx and CO concentration corrected to 15% O<sub>2</sub> (dry). [District Rule 4703] Federally Enforceable Through Title V Permit
37. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or 20, CO (ppmv) - EPA Method 10 or 10B, stack gas oxygen - EPA Method 3 or 3A or 20, fuel gas sulfur content - ASTM D1072, D4468, or D3246 or double GC for H<sub>2</sub>S and mercaptans, fuel gas HHV and LHV - ASTM D3598, D1826 or D1945, Ammonia slip - BAAQMD method ST-1B. [40 CFR 60.335(b) and District Rules 1081 & 4703] Federally Enforceable Through Title V Permit
38. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
39. Performance testing shall be witnessed or authorized District personnel. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3] Federally Enforceable Through Title V Permit
40. Permittee shall report the following emission exceedance to the District: emission rates of NOx & CO on a three-hour rolling average and NSPS emission rate on one hour average. [District Rule 1070, 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

41. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption for normal operation and for the startup/shutdown periods. This information may be recorded electronically. Daily entries in the operating log are not required for periods of non-operation. [District Rules 2520 & 4703] Federally Enforceable Through Title V Permit
42. Permittee shall maintain accurate records of all maintenance activities, periodic inspections, and repairs of SCR unit, water and NH<sub>3</sub> injection systems, and their associated controller and instrumentation units. [District Rules 1070 and 4703] Federally Enforceable Through Title V Permit
43. Permittee shall comply in full with Rule 4001 (New Source Performance Standards, 40 CFR 60 Subpart GG) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit
44. The owner or operator shall maintain all records for a period of five years from the date of entry and shall make such records available to the APCO upon request. [District Rules 1080, 2201, & 4703, 6.2.4] Federally Enforceable Through Title V Permit
45. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Fresno County Rules 108.1 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
46. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Fresno County Rule 406 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
47. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332(a)(2), (c), and (f), 60.333 (a) and (b); 60.334(a), (c)(1), (c)(2), and (c)(3), and 60.335(b), (c)(2), (c)(3), and (d); District Rule 4703 (as amended 12/19/02), Sections 5.1.2, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
48. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rule 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** C-1121-34-9

**ISSUANCE DATE:** 09/19/2011

**LEGAL OWNER OR OPERATOR:** AERA ENERGY LLC  
**MAILING ADDRESS:** 10000 MING AVE  
P O BOX 11164  
BAKERSFIELD, CA 93389-1164

**LOCATION:** HEAVY OIL PRODUCTION  
FRESNO COUNTY, CA

**SECTION:** 32 **TOWNSHIP:** 19S **RANGE:** 15E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF TG-2, 52.7 MMBTU/HR ALLISON GM 501-KB5 NATURAL GAS FIRED TURBINE WITH WATER INJECTION DRIVING A 4 MW ELECTRICAL GENERATOR: REPLACE HEAT RECOVERY STEAM GENERATOR WITH NEW UNIT INCLUDING SELECTIVE CATALYTIC REDUCTION (SCR) WITH AMMONIA TANK AND DELIVERY SYSTEM TO ACHIEVE TO 5 PPMV NOX FOR RULE 4703 COMPLIANCE


## CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Unit shall be exclusively fired with natural gas containing no more than 1 grain of total sulfur per 100 standard cubic feet of gas. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Except during periods of startup, shutdown, and shakedown, emissions rates (three hour rolling average) shall not exceed any of the following: NOx (as NO2): 5 ppmv dry @ 15% O2, CO: 38 ppmv dry @ 15% O2. [District Rule 2201 and 4703] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

  
DAVID WARNER, Director of Permit Services

C-1121-34-9 : Sep 19 2011 4:26PM - EDGEHILL : Joint Inspection NOT Required



5. Emissions shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 46.3 lb/day, CO: 107.5 lb/day, PM<sub>10</sub>: 8.3 lb/day; SO<sub>x</sub> (as SO<sub>2</sub>): 3.6 lb/day or VOC: 2.7 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The owner or operator shall be required to conform to the compliance testing and sampling procedures described in District Rule 1081 (as amended 12/16/93). [District Rules 1081 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
8. If this unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [40 CFR 60.334(h)(3) and District Rule 1070] Federally Enforceable Through Title V Permit
9. If this unit is not fired on PUC-regulated natural gas, the operator shall submit a semiannual report listing any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% by weight. [40 CFR 60.334(j)(2)(i)] Federally Enforceable Through Title V Permit
10. If this unit is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the turbine shall be determined using ASTM D3246 or double GC for H<sub>2</sub>S and mercaptans, and fuel H<sub>2</sub>S content - gas detection tubes calibrated for H<sub>2</sub>S or other District-approved fuel sulfur detection method(s) or device(s). [40 CFR 60.335(b)(10)(2) and District Rule 1070] Federally Enforceable Through Title V Permit
11. If this unit is fired on PUC-regulated natural gas, then maintain on file copies of natural gas bills. [District Rule 2520] Federally Enforceable Through Title V Permit
12. Except during startup, shutdown, and reduced load periods, any one-hour period during which the average ammonia injection flowrate, as measured by the continuous monitoring system, falls outside the flowrate range as determined to demonstrate compliance shall be reported to the APCO. Each report shall include the average average water-to-fuel ratio, ammonia injection flowrate, average fuel consumption, ambient conditions, turbine gas load and nitrogen content of the fuel during the period of excess emissions. [40 CFR 60.334(j)(1)(i)] Federally Enforceable Through Title V Permit
13. Permittee shall install, operate and maintain in calibration, to within 5% accuracy, a monitoring system which continuously measures and records the water-to-fuel ratio and fuel consumption and which correlates the water-to-fuel ratio during initial source testing with the NO<sub>x</sub> concentration in the exhaust. [District NSR Rule, Rule 4703 and 40 CFR 60.334(a)] Federally Enforceable Through Title V Permit
14. Permittee shall install and operate a system which continuously measures and records elapsed time of turbine operation. [District Rule 40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
15. Permittee shall install, operate and maintain in calibration a system which continuously measures and records ammonia injection flow rate, monitors ammonia pressure, and sounds an alarm if outside the acceptable operating pressure range. Ammonia injection flow rate and pressure shall be operated within the range recommended by SCR manufacturer and determined by performance tests such that the turbine maintains 95% or greater control efficiency or complies with the applicable NO<sub>x</sub> emission concentration limit. [District Rule 40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
16. Gas turbine engine shall be equipped with water injection system for NO<sub>x</sub> control. [District Rule 2201] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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22. The ammonia (NH<sub>3</sub>) emissions from the exhaust of the SCR system serving this gas turbine shall not exceed 20 ppmvd @ 15% O<sub>2</sub>. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Permittee shall maintain accurate records of ammonia consumption. [District Rule 1070 and 4703] Federally Enforceable Through Title V Permit
24. Gas temperature at SCR catalyst section inlet shall be continuously monitored by operational temperature indicator. Inlet gas temperature to catalyst bed shall be maintained within range recommended by catalyst manufacturer and determined by performance tests. [40 CFR 60.334(a) and District Rule 4703] Federally Enforceable Through Title V Permit
25. During an initial shakedown period, except during periods of startup and shutdown, the emissions shall not exceed any of the following limits: 35 ppmvd NO<sub>x</sub> @ 15% O<sub>2</sub> referenced as NO<sub>2</sub>. The shakedown period shall not exceed 90 calendar days from the initial startup of the unit under this permit. The shakedown period must be concluded prior to the applicable Rule 4703 compliance deadline selected for this unit. The permittee shall maintain a record of the date of initial operation of this unit, fuel combusted (scf/day) on daily basis, water-to-fuel ratio, and results of ammonia injection rate monitoring from CMS. These records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Startup and shutdown of the gas turbine, as defined in this permit and in 40 CFR Subpart A 60.2, shall not exceed a time period of two hours for startup and two hours for shutdown, per occurrence. Emission concentrations subsequent to this startup period shall not exceed the limits specified in this permit except during shutdown. [40 CFR Subpart A 60.2 and District Rule 4703] Federally Enforceable Through Title V Permit
27. The duration of reduced load shall not exceed a time period of one hour per occurrence. [District Rule 4703] Federally Enforceable Through Title V Permit
28. Daily records of NO<sub>x</sub> and CO emission calculations during days of startup/shutdown shall be maintained and such records shall be made readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
29. Maximum NO<sub>x</sub> (as NO<sub>2</sub>) and SO<sub>x</sub> (as SO<sub>2</sub>) emission rates (1 hr average) shall not exceed NSPS standard of 150 ppmv-dry @ 15% O<sub>2</sub>, and 150 ppmv-dry @ 15% O<sub>2</sub>, respectively. [40 CFR 60.332(a)(2) & 60.333(a)] Federally Enforceable Through Title V Permit
30. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, NH<sub>3</sub>, and O<sub>2</sub> at least once every month in which a source test is not performed. NO<sub>x</sub>, CO and O<sub>2</sub> monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH<sub>3</sub> monitoring shall be conducted utilizing gas detection tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the previous calendar month. [District Rule 4703] Federally Enforceable Through Title V Permit

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31. If the NO<sub>x</sub> or CO concentrations corrected to 15% O<sub>2</sub> as measured by the portable analyzer or the NH<sub>3</sub> concentration, as measured by gas detection tubes or a District approved equivalent method, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continues to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4703] Federally Enforceable Through Title V Permit
32. All NO<sub>x</sub>, CO, O<sub>2</sub> and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NO<sub>x</sub>, CO and O<sub>2</sub> analyzer as well as the NH<sub>3</sub> emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4703] Federally Enforceable Through Title V Permit
33. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, NH<sub>3</sub> and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub>, CO and NH<sub>3</sub> concentrations corrected to 15% O<sub>2</sub>, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH<sub>3</sub> emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rule 4703] Federally Enforceable Through Title V Permit
34. A source test to demonstrate compliance with NO<sub>x</sub>, CO, and NH<sub>3</sub> emission limits, and fuel sulfur content shall be performed within 60 days after the shakedown period has been completed for this modified unit. The appropriate ammonia injection rate, fuel consumption, ammonia to fuel ratio, water to fuel ratio, and any other associated operating parameter shall be continuously monitored and recorded during this test to establish acceptable operating ranges. Selective Catalytic Reduction (SCR) 95% control efficiency may be demonstrated as an alternative to compliance with the Rule 4703 NO<sub>x</sub> emissions concentration limit. [District Rules 2201, 40 CFR 60.334(g), 40 CFR 60.335(b), and 4703] Federally Enforceable Through Title V Permit
35. Source testing to measure exhaust gas NO<sub>x</sub>, CO, and NH<sub>3</sub> concentrations and, if applicable, Selective Catalytic Reduction (SCR) control efficiency shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). Performance testing shall be conducted under conditions representative of normal operation. [40 CFR 60.335(b), District Rule 4703, District Rule 2520] Federally Enforceable Through Title V Permit
36. The owner or operator shall provide source test information annually regarding the exhaust gas NO<sub>x</sub> and CO concentration corrected to 15% O<sub>2</sub> (dry). [District Rule 4703] Federally Enforceable Through Title V Permit
37. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or 20, CO (ppmv) - EPA Method 10 or 10B, stack gas oxygen - EPA Method 3 or 3A or 20, fuel gas sulfur content - ASTM D1072, D4468, or D3246 or double GC for H<sub>2</sub>S and mercaptans, fuel gas HHV and LHV - ASTM D3598, D1826 or D1945, Ammonia slip - BAAQMD method ST-1B. [40 CFR 60.335(b) and District Rules 1081 & 4703] Federally Enforceable Through Title V Permit
38. The District must be notified 30 days prior to any performance testing and a test plan shall be submitted for District approval 15 days prior to such testing. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
39. Performance testing shall be witnessed or authorized District personnel. Test results must be submitted to the District within 60 day of performance testing. [District Rule 1081, 7.2, 7.3] Federally Enforceable Through Title V Permit
40. Permittee shall report the following emission exceedance to the District: emission rates of NO<sub>x</sub> & CO on a three-hour rolling average and NSPS emission rate on one hour average. [District Rule 1070, 2201 and 4703] Federally Enforceable Through Title V Permit

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41. Operator shall maintain a stationary gas turbine operating log that includes, on a daily basis the actual local start-up and stop time, length and reason for reduced load periods, total hours of operation and quantity of fuel used. During days of gas turbine startup/shutdown, permittee shall maintain accurate daily records of natural gas consumption for normal operation and for the startup/shutdown periods. This information may be recorded electronically. Daily entries in the operating log are not required for periods of non-operation. [District Rules 2520 & 4703] Federally Enforceable Through Title V Permit
42. Permittee shall maintain accurate records of all maintenance activities, periodic inspections, and repairs of SCR unit, water and NH<sub>3</sub> injection systems, and their associated controller and instrumentation units. [District Rules 1070 and 4703] Federally Enforceable Through Title V Permit
43. Permittee shall comply in full with Rule 4001 (New Source Performance Standards, 40 CFR 60 Subpart GG) requirements, including notification, recordkeeping and monitoring requirements. [District Rule 4001] Federally Enforceable Through Title V Permit
44. The owner or operator shall maintain all records for a period of five years from the date of entry and shall make such records available to the APCO upon request. [District Rules 1080, 2201, & 4703, 6.2.4] Federally Enforceable Through Title V Permit
45. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Fresno County Rules 108.1 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
46. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Fresno County Rule 406 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
47. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.332(a)(2), (c), and (f), 60.333 (a) and (b); 60.334(a), (c)(1), (c)(2), and (c)(3), and 60.335(b), (c)(2), (c)(3), and (d); District Rule 4703 (as amended 12/19/02), Sections 5.1.2, 5.2, 6.1, 6.3.1, 6.3.3, 6.4, 6.4.5, and 6.4.6 as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
48. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: 40 CFR 60.7(b), 60.8, 60.8(d), 60.13, and 60.13(b); District Rule 1081 (as amended 12/16/93) as of the date of permit issuance. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit